

SHIELD 5000 D SAE 15W-40 API CI4

PRODUCT DESCRIPTION

LUPROMAX Oil with *Heat Activated Technology™* is specially developed to **LU**bricate, **PRO**tect and **MAX**imize your engine performance.

LUPROMAX SHIELD 5000 D 15W-40 is an advanced, premium diesel engine oil specifically developed to provide outstanding protection in both modern, demanding low-emission diesel engines and older diesel engines operating on low or high sulphur fuel under severe on and off-highway conditions. The advanced additive technology provided maximum acceleration, torque and ultimate power for outstanding performance and reliability.

LUPROMAX SHIELD 5000 D 15W-40 has been formulated from highly refined hydro cracked base stocks and high performance additive system to provide superior control of oil thickening due to soot build-up and high temperatures as well as outstanding resistance to oxidation, corrosion and high temperature deposits. It minimizes high temperature carbon deposits, which is by far the most concerned issue for today's heavily loaded modern diesel engines. The reduced carbon build-up means less rings wear and cylinder bore polishing resulting in much reduced diesel consumption, less ring breakage and piston skirt scuffing. Its high ability to neutralize acidic by-products from the diesel combustion ensures minimum corrosion of the engine parts throughout the lengthy oil drain interval.

BENEFIT & SUPERIORITY:

- Help maintain engine cleanliness and continuously prevent dirt and sludge build-up.
- Excellent oxidation stability that reduces engine deposits, viscosity increase and acid generation.
- Effective TBN reserves that neutralize acids and enable extended drain intervals.
- Highly effective soot dispersion and excellent wear protection at high temperatures.
- Outstanding resistance to corrosion helps extend life of critical wear surfaces.
- Tested and proven to deliver improved power and acceleration.
- Reduced friction and engine noise, enhances shear stability for a quieter, smoother and enjoyable drive.

APPLICATIONS:

LUPROMAX SHIELD 5000 D 15W-40 is designed to optimize performance and protection for modern diesel engines where API CI4 (and below) is recommended.

- **LUPROMAX SHIELD 5000 D 15W-40** is recommended for use in:
 - All super high performance diesel applications including modern low emission engine designs with Diesel Particulate Filters (DPFs) and Exhaust Gas Recirculation (EGR) systems, naturally aspirated, super or turbo-charged diesel powered equipment from leading American, European and Japanese manufacturers.
 - On-highway light and heavy duty trucking including high speed/ high load and pick-up/ delivery.
 - Off-highway industries including: mining, construction, quarrying and agriculture.

LUPROMAX SHIELD 5000 D 15W-40 is specially design to give you confidence of protection beyond that of conventional oils.

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PERFORMANCE LEVEL:

LUPROMAX SHIELD 5000 D 15W-40 meets and exceeds the requirements of:

- API CI4
- ACEA A3, B4, E3, E5, E7
- Allison C-4
- JASO DH-1
- Caterpillar ECF-1
- Cummins CES 20071, 72, 76, 77, 78
- DETROIT DIESEL 93K215
- Global DHD-1
- MTU Category 2
- MACK EO-L, EO-M, EO-M+
- MAN 270, 271, M3275
- MB 228.3, 229.1
- VOLVO VDS-3
- VW 505
- ZF TE-ML-04C

TYPICAL PROPERTIES:

Properties	Test Method	Typical Result
SAE Viscosity Grade	SAE J 300	15W-40
Kinematic Viscosity at 100°C, cSt	ASTM D445	15.54
Kinematic Viscosity at -20°C (CCS), cP	ASTM D5293	6600
Kinematic Viscosity at 150°C (HTHS), cP	ASTM D4683	4.2
Viscosity Index	ASTM D2270	140
Pour Point (Multi Grade), °C	ASTM D97	-39
Flash Point COC, °C	ASTM D92	216
Total Base Number, mg KOH/g	ASTM D2896	13.5
Sulphate Ash Content, % wt	ASTM D 874	1.42
Metal Content	ASTM D 4628	
Calcium (Ca)		0.3850
Magnesium (Mg)		-
Zink (Zn)		0.1215
Foaming Tendency/Stability, ml/ml	ASTM D 892	
Sequence I		Nil / 0
Sequence II		0 / 0
Sequence III		Nil / 0
Volatile properties, Noack, % wt	ASTM D 5800	10
Copper Blade Corrosion	ASTM D 130	1a
Shear stability, 30 cycles, cSt	CEC L -14-A-93	13.9
Foaming at High Temperature 150°C, ml/ml	ASTM D 6082	25/0

These characteristics are typical of current production. While future production, variations in these characteristics may occur